



**ECO PRECISION
TOOLS SDN BHD**

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**CNC Enhancement
Accessories**



**Zero Point System
Self Centering Vise**

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Modular clamping system Maximize the efficiency of your machine tool

Mechanical zero point system

When machining in small quantities parts and frequently replacing fixtures, it is necessary for you to know the clamping solutions and services provided

Zero point base plate, pneumatic plate, self-centering vise, riser, tombstone, pyramid, dovetail fixture and customized solutions for global customers.

Rotary solution, probing system, to help you to optimize processing technology, to improve machine tool efficiency and increase your competitive edge



Various Applications of Mechanical Zero Point System

Application 1 (zero point base plate, self-centering vise, right angle plate)

Zero point base plate and self centering vise fixed on machine tool table are the most commonly used scenarios

Double station plate can improve machine tool usage and clamping efficiency further

If without a rotary table, when using a right angle plate, 5 surfaces can be machined to ensure machining accuracy



Application 2 (on 4th axis rotary table)

Fixing the zero point base plate on the flange of the 4-axis, combined with various types of fixtures to ensure that the coordinate origin remains unchanged, which can achieve efficient clamping and machining

For C170 and small 4axis models, please use 52mm plate, for bigger 4axis models, please choose 96mm type zero plate and self centering vise.

please use the positioning hole on the zero plate to calibrate the center without purchasing a center calibration plate



Various Applications of Mechanical Zero Point System

Application 3 (trunnion table)

"The trunnion table and zero point plate are also the most common application."

4axis rotary, tailstock, 2/3/4 multiple sides in one bridge plate, 2/3/4 sets of zero point, vise, chuck combination

Pneumatic zero point plate can also be selected to achieve automated upper and lower workpiece for machining.



Application 2 (dovetail fixtures)

Dovetail fixtures can be mounted on four and five-axis CNC machines for milling applications. It offers superior clamping strength and part access

Dovetail and zero point plate combined, which can reduce clamping time, improve the efficiency of machine tool, and also improve machining accuracy. Ideal for small parts that need a lot of clearance

Three models of dovetails for you to choose. all of which has been improved to have the ability to mount to 52 and 96mm base plates



Various Applications of Mechanical Zero Point System

Application 3 (on 5th axis machine tool)

Five axis machine tools and five axis turntables are the most commonly used scenarios for zero point products and self centering vise.

Small size, strong clamping force, advantages in avoiding travel restrictions, preventing interference, etc

Can customize various solution according your five axis worktable. Please send rotary table or machine dimension to us, we will send the simulated 3D model for confirmation



Application 4 (riser+ zero point base plate +self centering vise)

For some small parts machining on 5axis machine tools, you have to increase the height of the parts to improve flexibility and prevent interference.

Riser and zero point plate is a very popular and cheap solution. The material for the raised is aluminum, and the bolt holes at the bottom are determined based on the machine tool work table T-slot distance.

Can customize various types of riser based on your machine tool size and zero point plate. Please contact our sales manager to know more.



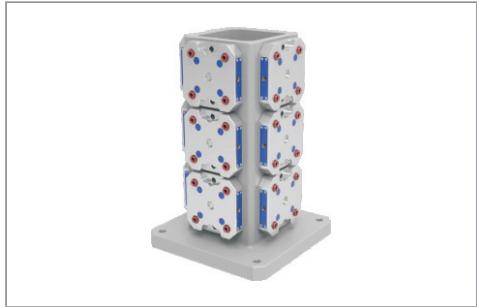
Various Applications of Mechanical Zero Point System

Application 5 (tombstone)

Tombstone often used on VMC and HMC, which is efficient, and effective workholding solutions for CNC machining operations

Many type of fixture can fixed on the tombstone, such as zero point plate, self centering vise, OK vise. to meet your processing requirements.

Tombstone can also be integrated with 5th axis rotary table for processing multiple surfaces at one time, improving machining efficiency.

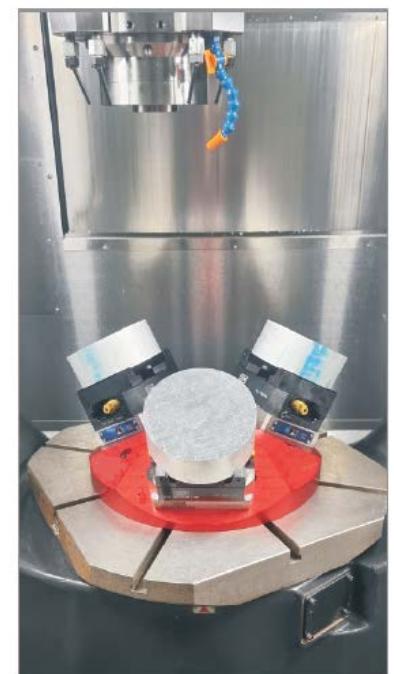


Application 6 (pyramid)

Pyramid design provides maximum access to all machined surfaces and allows or enhanced spindle and cutting tool clearance

Pyramid compatible with SC96-S195 zero point plate, various of dovetail, vise, chuck and serrated jaw options are available.

Noted: Please inform us of the model and specifications of the machine tool before ordering, or send us the drawings of the worktable. We will design the fixing holes according to the drawings



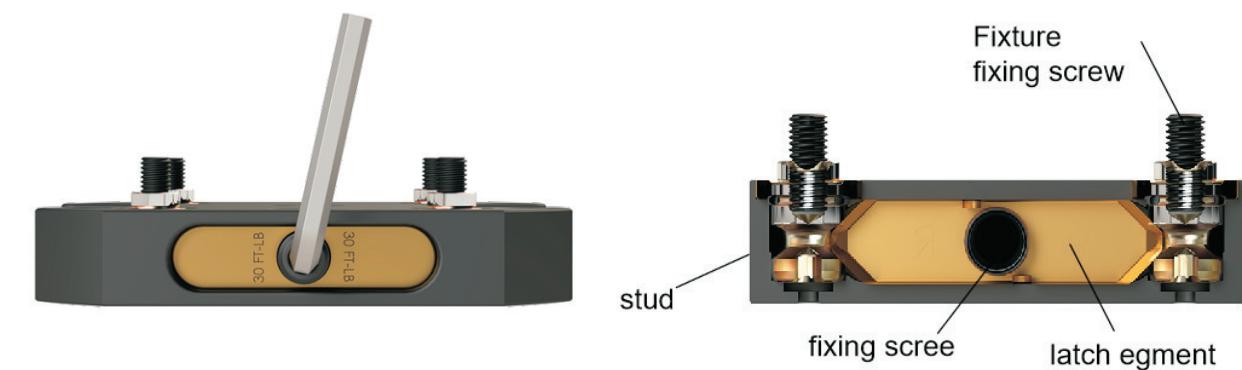
Mechanical zero point basic

The four hole mechanical zero point clamping is a positioning tool that can quickly exchange fixtures and centering fixtures. The standard installation ways enables the rapid and repeatable conversion of vice, pallet, chuck and other tools between machine tools, and ensures the accuracy without disassembly and alignment time

Benefits used zero point clamping system

- Repetition accuracy is within 0.005mm
- Large bearing area, suitable for heavy cutting
- Reduce fixture replacement and adjustment time by more than 80%
- Fixtures can be standardized
- Numerous combinations of tooling and fixtures can be designed"

Mechanical zero point structure:

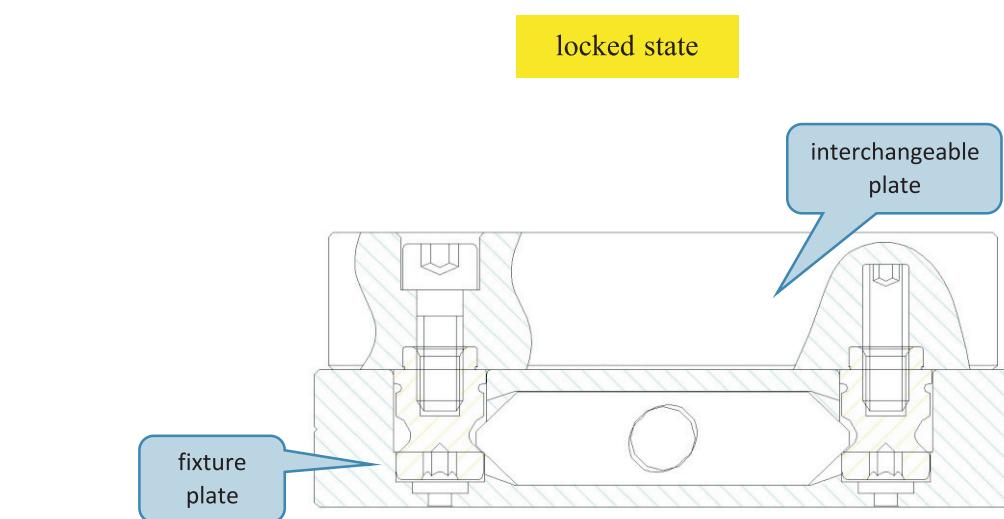
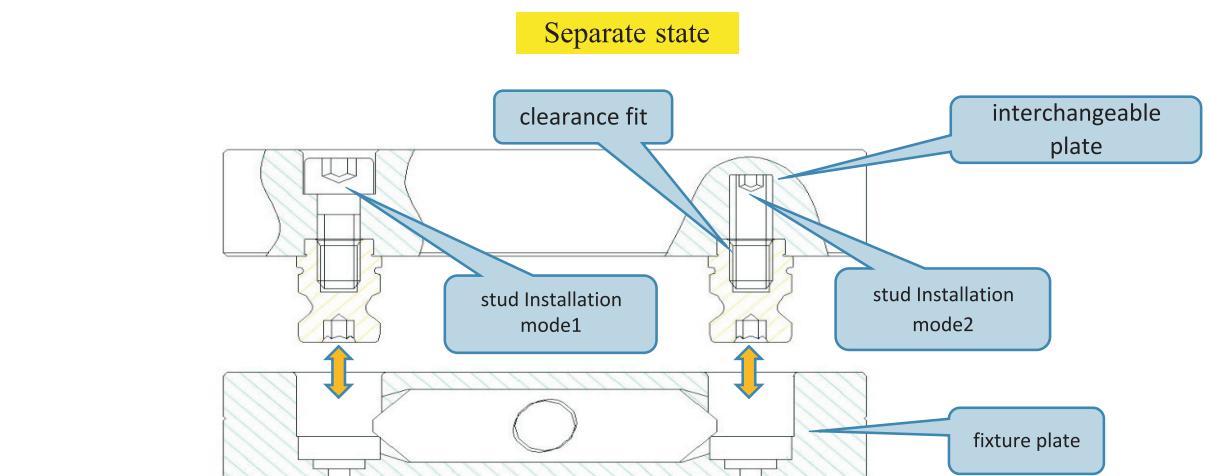


Various fixture combination

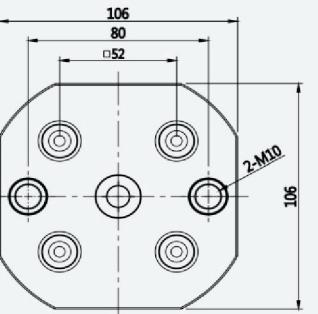
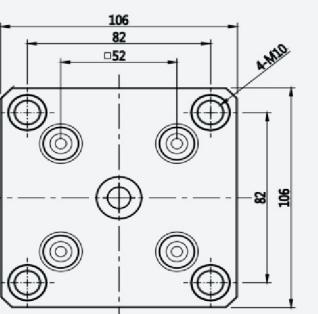
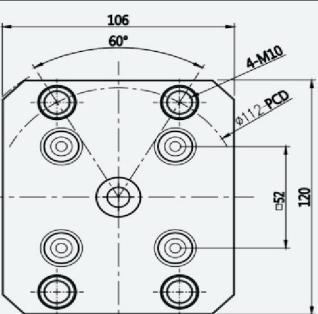
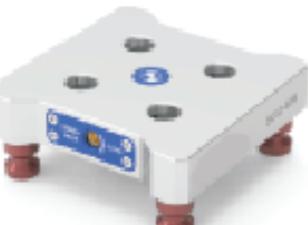
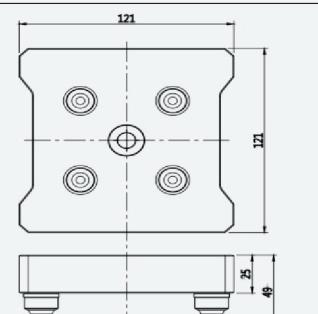
With the mechanical zero point plate, you can design various tooling fixtures flexibly, and exchange them among three-axis, four axis and five axis machine tools quickly to reduce the downtime of the machine tool.



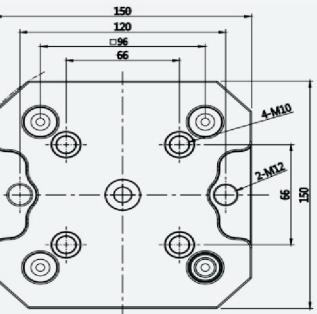
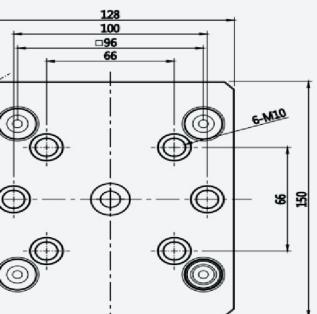
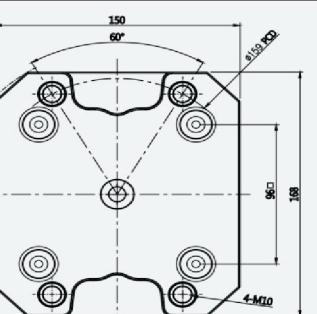
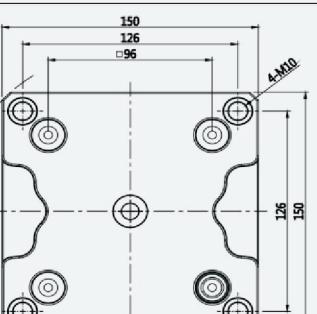
Plate installation



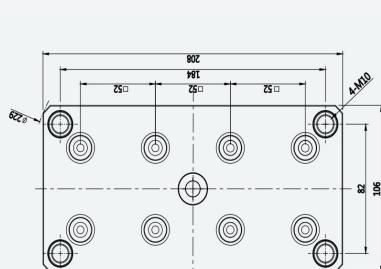
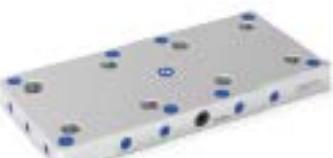
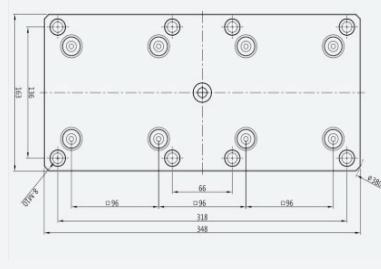
52mm type zero point base plate

	SC52-S120 Dimension: 106*106*25 Repeatability: 0.005 Clamping force: 18KN Material: steel Weight/Kg: 2KG	
	SC52-S145 Dimension: 106*106*25 Repeatability: 0.005 Clamping force: 18KN Material: steel Weight/Kg: 2KG	
	SC52-S150 Dimension: 120*106*25 Repeatability: 0.005 Clamping force: 18KN Material: steel Weight/Kg: 2KG	
	SC52-S96 Dimension: 121*121*25 Repeatability: 0.005 Clamping force: 18KN Material: steel Weight/Kg: 2.5KG	

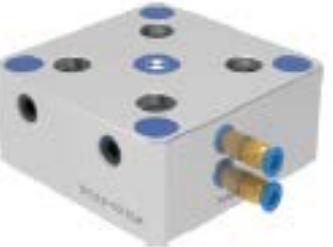
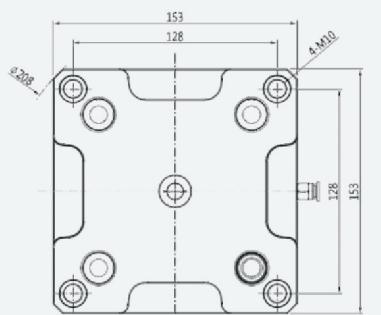
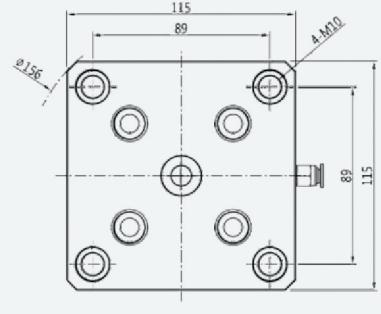
96mm type zero point base plate

	SC96-S190 Dimension: 150*150*30 Repeatability: 0.005 Clamping force: 22KN Material: steel Weight/Kg: 4KG	
	SC96-S195 Dimension: 150*128*30 Repeatability: 0.005 Clamping force: 22KN Material: steel Weight/Kg: 4KG	
	SC96-S200 Dimension: 168*150*30 Repeatability: 0.005 Clamping force: 22KN Material: steel Weight/Kg: 5KG	
	SC96-S205 Dimension: 150*150*30 Repeatability: 0.005 Clamping force: 22KN Material: steel Weight/Kg: 4KG	

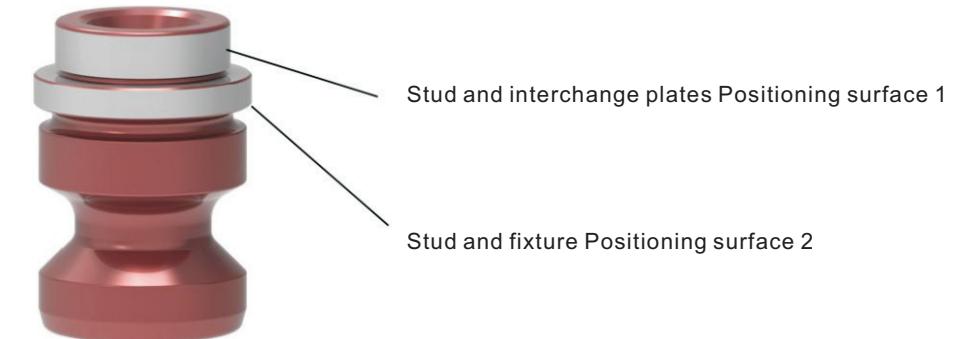
Multi-station base plate

	SC52-S230 Dimension: 208*106*25 Repeatability: 0.005mm Clamping force: 18KN Material: steel Weight/Kg: 4KG	
	SC96-S379 Dimension: 348*163*25 Repeatability: 0.005mm Clamping force: 22KN Material: steel Weight/Kg: 12KG	

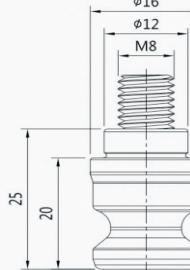
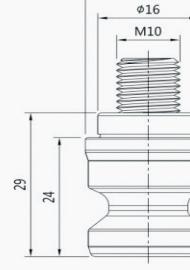
Pneumatic base plate

	SC52-S160A Dimension: 115*115*46 Repeatability: 0.005 Clamping force: 18KN Material: steel Weight/Kg: 4KG	
	SC96-S210A Dimension: 153*153*50 Repeatability: 0.005 Clamping force: 22KN Material: steel Weight/Kg: 7KG	

Studs



★ Note: the stud and the exchange plate should be interstitial. When installing stud, lubricate the cylinder surface to prevent straining the surface

	LD12-16 Dimension: $\phi 16*34$ Material: steel Weight/Kg: 0.04KG	
	LD16-20 Dimension: $\phi 20*40$ Material: steel Weight/Kg: 0.05KG	

Studs locking



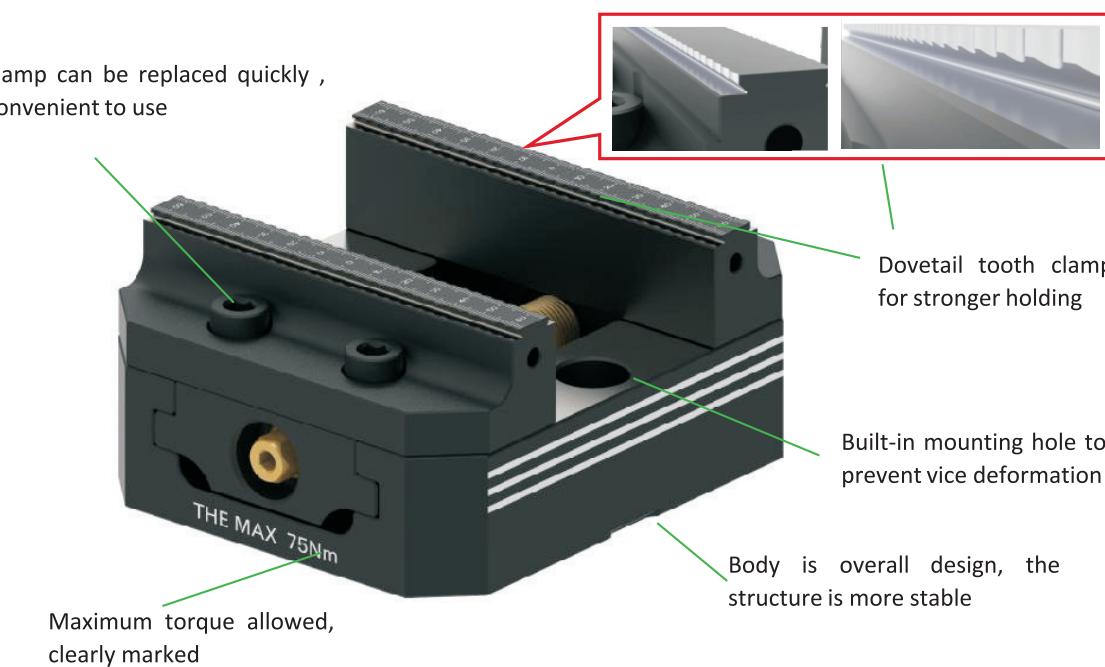
Self-centering vise

Self centering vise is applicable to various CNC processing fields. It has the characteristics of high precision, light weight, large clamping range and flexible operation. It can realize positioning and clamping in one step, and its claw can hold the work piece with complex contour. The work piece with different contour can be processed by simply changing the claw. The accuracy of repeated positioning is within 0.02mm. Vises can be connected and replaced with major foreign brands, such as Lang brand, 5th, Jaggens, Schunk, etc.

Its compact structure and practical design make it the most popular choice for most machining plants in the world.

It is more flexible when used with four hole mechanic zero point system.

Self centering vise is a good choice for flexible production!



Small size vise

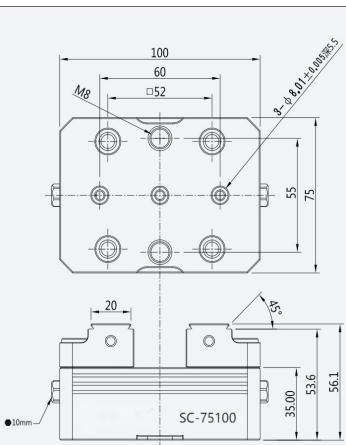
SC-75100 and SC-75150 are small size vise.

They are suitable for clamping small products and can be used with 52 type four hole zero point base to realize rapid clamping and positioning and improve production efficiency.



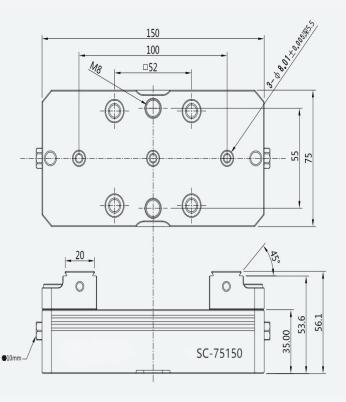
SC-75100

Dimensions: 75*100*56mm
Repeatability: 0.01mm
Forward jaw clamping range: 0-40mm
Reverse jaw clamping range: 38-76mm
Jaw width: 75mm
maximum torque: 60Nm
Weight: 2.5KG



SC-75150

Dimensions: 75*150*56mm
Repeatability: 0.01mm
Forward jaw clamping range: 0-90mm
Reverse jaw clamping range: 38-126mm
Jaw width: 75mm
maximum torque: 60Nm
Weight: 3KG

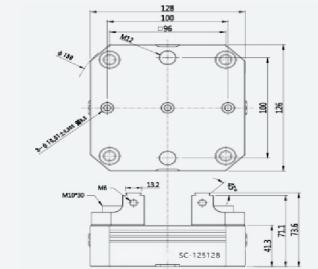
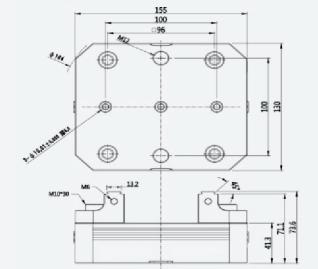


Medium size vise

Double station vise

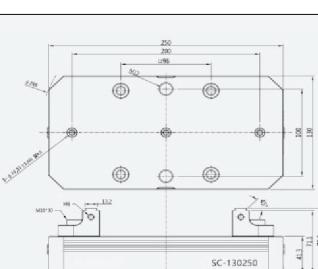
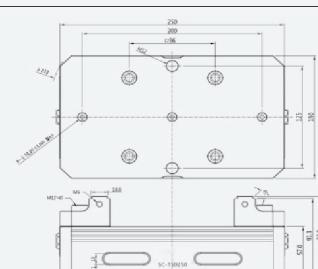
Large size centering vice

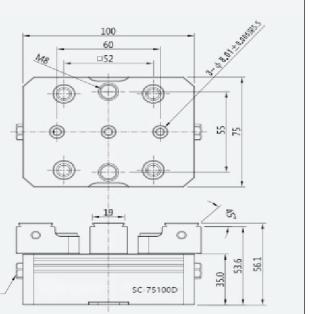
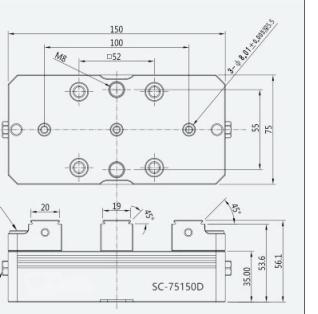
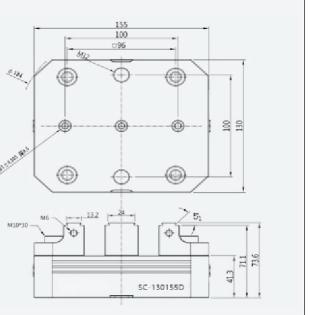
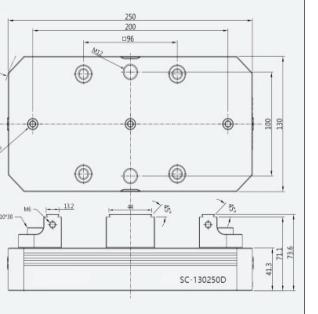
SC-130155 and SC125-128 are medium size self centering vise, they are the most widely used and are most loved by the majority of users. It can be used with 96 type four hole zero point base, which is more convenient and fast, and can quickly improve the production efficiency.

	SC-125128 Dimensions: 125*128*73.5mm Repeatability: 0.02mm Forward jaw clamping range: 0-56mm Reverse jaw clamping range: 78-128mm Jaw width: 125mm maximum torque: 75Nm Weight: 6KG	
	SC-130155 Dimensions: 130*155*73.5mm Repeatability: 0.02mm Forward jaw clamping range: 0-82mm Reverse jaw clamping range: 78-150mm Jaw width: 130mm maximum torque: 75Nm Weight: 7KG	

Large size centering vice

SC-130250 and SC-150250 are large size self centering vise, they are used for clamping large parts. It can be used with 96 type four hole zero point base, which is more convenient and fast, and can quickly improve the production efficiency.

	SC-130250 Dimensions: 130*250*73.5mm Repeatability: 0.02mm Forward jaw clamping range: 0-180mm Reverse jaw clamping range: 78-254mm Jaw width: 130mm maximum torque: 75N/m Weight: 10KG	
	SC-150250 Dimensions: 150*250*94mm Repeatability: 0.02mm Forward jaw clamping range: 0-155mm Reverse jaw clamping range: 94-243mm Jaw width: 150mm maximum torque: 100N/m Weight: 16KG	

	SC-75100D Dimensions: 75*100*56mm Repeatability: 0.01mm Forward jaw clamping range: 0-10mm Reverse jaw clamping range: 17.5-25mm Jaw width: 75mm maximum torque: 60Nm Weight: 2.5KG	
	SC-75150D Dimensions: 75*150*56mm Repeatability: 0.01mm Forward jaw clamping range: 0-37mm Reverse jaw clamping range: 17.5-55mm Jaw width: 75mm maximum torque: 60Nm Weight: 3KG	
	SC-130155D Dimensions: 130*155*73.5mm Repeatability: 0.02mm Forward jaw clamping range: 0-28.5mm Reverse jaw clamping range: 32-62mm Jaw width: 130mm maximum torque: 75Nm Weight: 8KG	
	SC-130250D Dimensions: 130*250*73.5mm Repeatability: 0.02mm Forward jaw clamping range: 0-63mm Reverse jaw clamping range: 32-99mm Jaw width: 130mm maximum torque: 75N/m Weight: 11KG	

Risers



SC96-80L

Dimensions: 130*150*104mm
Repeatability: 0.005mm
Clamping force: 22KN
Material: steel
Weight/Kg: 8.5KG

This riser a very flexible design, with 4 studs at the bottom that can be installed on various forms of 96mm base plates, and multiple risers can be used simultaneously to solve travel troubles.

Repeatability in 0.005mm,4pcs studs for free.



SC96-S275

Dimensions: $\varnothing 275*100$
Repeatability: 0.005mm
Clamping force: 22KN
Material: steel
Weight/Kg: 10KG

The S96-S275 raised zero point plate designed for five axis machine tools specially, which can avoid interference during machining.

The fixing hole can be customized according to the T-slot of the machine tool.

SC96-S195 base plate installed on the riser to ensure repeatability in 0.005mm,with 4pcs studs for free.

Right angle plate



SC96-A90

Dimensions: 150*149*199mm
Repeatability: 0.008mm
Clamping force: 22KN
Material: AL+steel
Weight/Kg: 5.5KG

Three sided tombstone



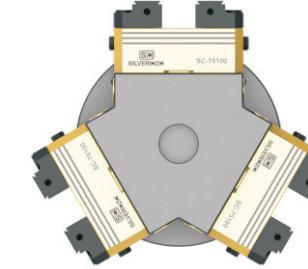
SC52-S160

Dimensions: $\varnothing 160*167mm$
Material:steel+aluminum
Weight: 7KG

This three side tombstone integrates the 52 type zero pint base plate, the compact design can add 3 small size vise SC-75100.

The unit features pull studs on the bottom so that it can be mounted onto any 96mm base plate.

It's perfect fit for C180 and C200 4th axis rotary table



Four sided tombstone

75-A96

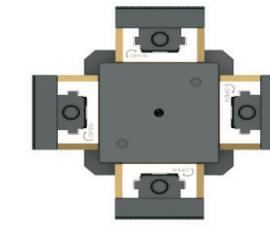
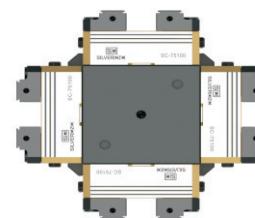


Dimensions: 126**126*200mm
Material:aluminum
Weight: 7KG

The 75-A96 is an ultra compact 4 sided mini tombstone designed to work with smaller 4 and 5 Axis machines. The goal was to increase productivity.

The entire tombstone will quick change onto any 96mm zero point base plates. With a maximum of 12 vises on the tombstone, the machine can run unattended.

It's perfect fit for C180 and C200 4th axis rotary table



Three sided pyramid

Pyramid give users the ability to increase the productivity of 5 axis machining centres. The angled faces permit multi-part loads while still providing the increased part access needed in 5 axis machining centres.

The flexible design ties together many of zero point base plate and top tooling options.



Dimensions: $\varnothing 395*115$ mm
Material: Aluminum
Weight: 35KG
30°angle. For use machines with 120°or more tilt.

Pyramid compatible with SC98-S195 zero point plate, all kinds of top tooling can be mounted on plate. such as self centering vise, dovetail fixtures



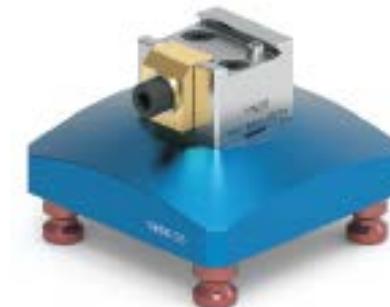
Vise mounted in vertical orientation

Noted: Please inform us of the model and specifications of the machine tool before ordering, or send us the drawings of the worktable. We will design the fixing holes according to the drawings



Vise mounted in horizontal orientation

Dovetail Fixtures



Locating pins for precise repeatability
"45°dovetail for increased clamping force"
Compatible with 52 and 96 zero point system

The dovetail is made of integral stainless steel grind to ensure accuracy and stability

YW12



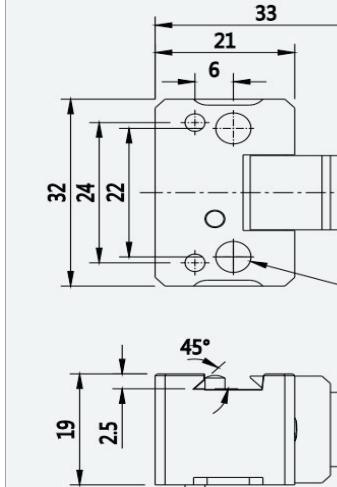
YW25



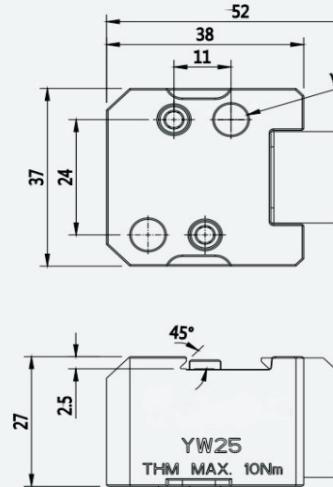
YW50



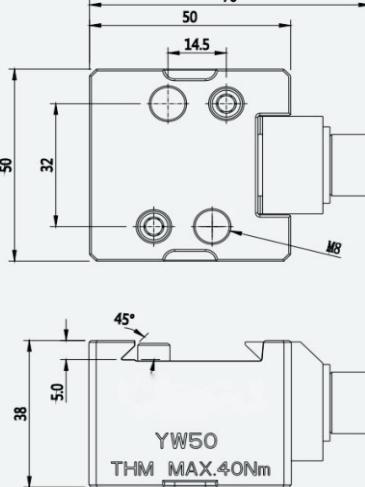
Dimension: 21*32*19mm
Dovetail depth: 2.54mm
Clamping range: 12-25mm
Material: stainless steel
Max. torque: 8Nm
Weight/Kg: 0.15KG



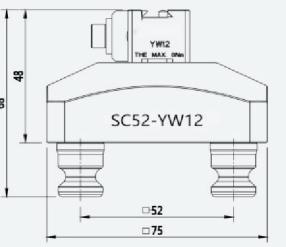
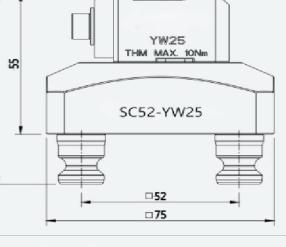
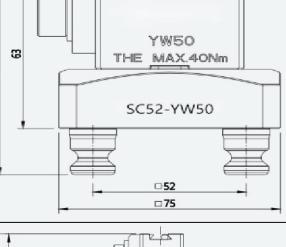
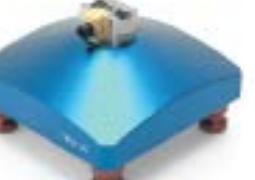
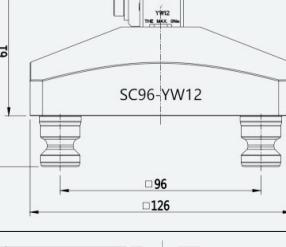
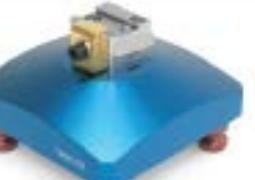
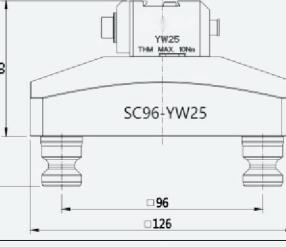
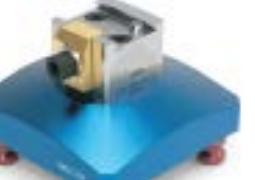
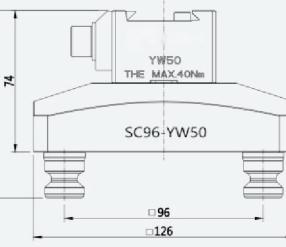
Dimension: 38*38*27mm
Dovetail depth: 2.54mm
Clamping range: 25-70mm
Material: stainless steel
Max. torque: 10Nm
Weight/Kg: 0.25KG



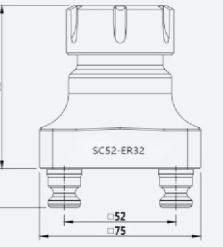
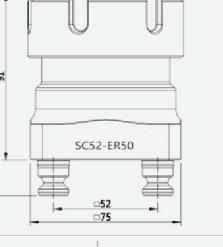
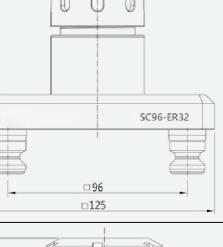
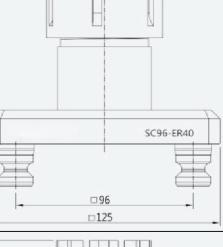
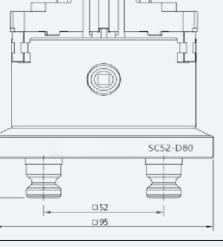
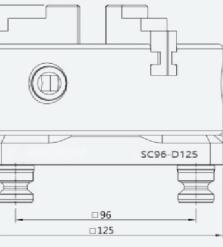
Dimension: 50*50*38mm
Dovetail depth: 2.54mm
Clamping range: above 50mm
Material: stainless steel
Max. torque: 40Nm
Weight/Kg: 0.65KG



Dovetail Fixtures

	SC52-YW12 Dimension: 21*32*19mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 8Nm Weight/Kg: 0.15KG	
	SC52-YW25 Dimension: 38*38*27mm Dovetail depth: 2.54mm Clamping range: 25-70mm Material: stainless steel Max. torque: 10Nm Weight/Kg: 0.25KG	
	SC52-YW50 Dimension: 50*50*38mm Dovetail depth: 2.54mm Clamping range: above 50mm Material: stainless steel Max. torque: 40Nm Weight/Kg: 0.65KG	
	SC96-YW12 Dimension: 126*126*85mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 8Nm Weight/Kg: 2KG	
	SC96-YW25 Dimension: 126*126*89mm Dovetail depth: 2.54mm Clamping range: 12-25mm Material: stainless steel Max. torque: 10Nm Weight/Kg: 2.5KG	
	SC96-YW50 Dimension: 126*126*98mm Dovetail depth: 5.05mm Clamping range: above 50mm Material: stainless steel Max. torque: 40Nm Weight/Kg: 2.8KG	

Chuck and collet

	SC52-ER32 Dimension: 75*75*83mm Clamping range: 3-25mm Material: stainless steel Weight/Kg: 1.4KG	
	SC52-ER50 Dimension: 75*75*92mm Clamping range: 6-40mm Material: stainless steel Weight/Kg: 3KG	
	SC96-ER32 Dimension: 125*125*104mm Clamping range: 3-25mm Material: stainless steel Weight/Kg: 2.6KG	
	SC96-ER40 Dimension: 125*125*111mm Clamping range: 3-32mm Material: stainless steel Weight/Kg: 3KG	
	SC52-D80 Dimensions: ϕ 95*100mm Material: Hardened steel+surface anti rust Weight: 2.5KG	
	SC96-D125 Dimensions: 125*125*130mm Material: Hardened steel+surface anti rust Weight: 8KG	

Accessories



6061 Aluminum Jaws

AL75-75*44*24 Compatible with SC-75100/SC-75150"

AL130-130*49*33 Compatible with SC-125128/SC-130155/SC-130250"

AL150-150*56*37 Compatible with SC-150250"



1018 Steel Jaws

SL75-75*44*24 Compatible with SC-75100/SC-75150"

SL130-130*49*33 Compatible with SC-125128/SC-130155/SC-130250"

SL150-150*56*37 Compatible with SC-150250"

Self centering vise jaws



Standard Steel Jaws

SSD75-75*44*24 Compatible with SC-75100/SC-75150"

SSD130-130*49*33 Compatible with SC-125128/SC-130155/SC-130250"

SSD150-150*56*37 Compatible with SC-150250"



Centering Pins



Threaded Locating Pins

Zero Point System Application

